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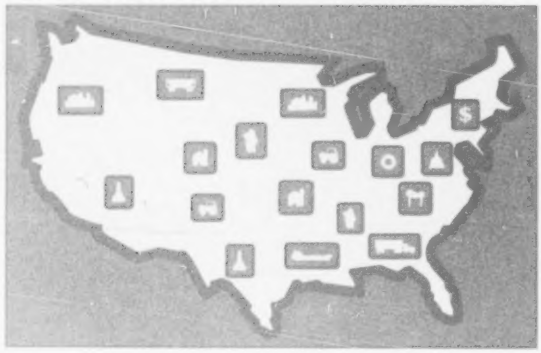

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The Corn Annual, edited by CRA Director of Communications Edith Munro, addresses subjects ranging from descriptions of the wet milling industry to its technology, products and economics. Copies are available upon request from the association.

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Member Company Plant Locations

Member Companies and Plant Locations

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Clinton, Iowa 52732
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Plants: Columbus, Nebraska 68602
Marshall, Minnesota 56258

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North Kansas City, Missouri 64116

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P.O. Box 428
Cedar Rapids, Iowa 52406
Plant: Cedar Rapids, Iowa 52406

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1417 Exchange Street
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Plant: Keokuk, Iowa 52632

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(a subsidiary of Tate & Lyle, PLC)
P.O. Box 151
Decatur, Illinois 62525
Plants: Decatur, Illinois 62525
Lafayette, Indiana 47905 (2)
Loudon, Tennessee 37774

Foreword

Americans entered 1993 preoccupied with the state of our national economy. As though part of some circadian response, we seem to have moved *en masse* to a state of worry. Our leaders, (or perhaps merely "our politically opportunistic trend-followers"), offer copious speeches earnestly sharing with us hand-wringing incantations of how bad things have become.

We see things differently. Exemplified by the scope and diversity of corn refining's contribution, the economy can obviously generate and can just as certainly continue to sustain growth and vigor.

This year's **Corn Annual** looks past big-picture evidence like some 93 percent of Americans employed, a 4.8 percent growth rate for the quarter which ushered in this season of malaise, and an historic combination of both low inflation and interest rates. Rather, these pages explore the spirit and the facts behind corn refining's relentless growth. More importantly, they expose the dramatic contribution our growth makes to the broader economy.

This year corn refiners will buy more U.S. farmers' corn, and will buy more construction, maintenance, power, transportation, services and technology than ever before in history. And, we shall put before American and international consumers more food, household, farm, fuel and industrial products than ever before in history. The money spent and earned by corn refiners in this scenario multiplies in impact as it courses through the economy—*irrigating other activity measuring in tens of billions of dollars!*

On behalf of CRA Chairman Pat Mohan and the members of the CRA board of directors who have supported his able leadership, we invite you to browse through this **Corn Annual**. Celebrate with us what's right with America's economy.

Terry L. Claassen
President

Introduction: An Expanding Industry, A Positive Future

by J. Patrick Mohan, Chairman
Corn Refiners Association, Inc.

The U.S. economy is the engine that, given the chance, will power the United States into new growth, a better standard of living and greater national security in the 21st Century. Without that chance, we risk more than the material benefits of economic growth -- we risk a continuing decline in our ability to remain a leader in maintaining political stability and security in the world.

This year's **Corn Annual** looks at the complex and essential role that one industry—corn refining—plays in the U.S. economy.

While corn refining is not a high profile industry like steel or automobile manufacturing, it is an essential U.S. industry, growing in importance every year.

Corn wet millers provide key markets for U.S. corn farmers and for an often-overlooked array of other industries. Across the U.S., energy companies, process chemical suppliers, transportation firms, manufacturing equipment producers and others depend on growing demand from corn refiners to fuel their own progress.

At the other end of the economic equation, user industries running the gamut from food processors to paper makers, builders, and metals producers rely on refined corn products to make their processes run more efficiently and their products perform better. Today, innovations in low-fat foods, in recycled papers, in cleaner fuels and in new biotechnology processes and products depend on corn products.

Finally, as corn refiners draw inputs from other industries and supply ingredients to user industries, they generate secondary economic activity that is critically important to local communities, regional economies, and national development. As a result, Americans who have never heard of corn wet milling benefit from our industry's success -- through their jobs and in their life style.

What is the outlook for this essential industry today? Despite the recession, 1992 was a good year for corn refining. Total shipments of products by CRA member companies posted strong growth in 1992. In the growing sweetener market HFCS-42 was especially successful. The increase in starch shipments in 1992 is a hopeful sign for the U.S. economy, since they are a "leading indicator" for the general economy because of their importance in paper and packaging products.

Corn refiners also contributed to the U.S. balance of trade with greater shipments of key value-added corn products. While some exports, like corn gluten feed, grew only slightly, corn gluten meal exports jumped over seven percent. We were pleased to see common corn starch shipments

Shipments of Products of the Corn Refining Industry—1992

Starch Products	
(Includes corn starch, modified starch and dextrins)	5,418,933,000
Refinery Products	
(Includes glucose syrup, high fructose corn syrup, dextrose, corn syrup solids, maltodextrins)	25,488,496,000
High fructose corn syrup—42%	7,785,955,000
High fructose corn syrup—55%+	9,595,144,000
Total HFCS	17,381,099,000
Total - Domestic Basic Products	30,907,429,000
Total - Export Basic Products	691,983,000
Corn oil (crude and refined)	1,027,134,000
Corn gluten feed and corn oil meal	10,665,066,000
Corn gluten meal	2,129,077,000
Steepwater	423,455,000
TOTAL SHIPMENTS	45,844,144,000

Compiled for the Corn Refiners Association, Inc., by Ernst & Young. Statistics represent shipments by members of the association. Shipments are in pounds, commercial weights, and do not include co-products derived from ethanol production.

increase almost 18 percent but were even happier to see a 29 percent climb in exports of higher value modified starches.

Slow growth in crude corn oil exports and a significant decline in semi-refined oil exports were more than offset by a whopping 147 percent leap in refined oil shipments—a welcome development since refined oil, again, represents a higher value product.

Among sweeteners, fructose in solid form and 55-HFCS shipments dropped, but 42-HFCS and pure fructose exports posted healthy growth.

Over all, revised government and industry estimates put refinery use of U.S. corn at 1.1 billion bushels, on track for a target of two billion bushels of use in 2001.

As they increased production, corn refining companies continued to look to the future, with research into new innovations, a continued drive toward greater manufacturing efficiency and a major financial commitment to growth.

In 1992, Minnesota Corn Processors' new Columbus plant came on line, providing Nebraska with its first wet milling facility. Cargill announced plans to built a new corn refining plant in Blair, Nebraska in 1993. American Maize-

Member Company Products

	ADM Corn Processing	American Maize-Products Company	Cargill, Incorporated	CPC International Inc.	Minnesota Corn Processors	National Starch and Chemical Company	Penford Products Company	Roquette America, Inc.	A.E. Staley Manufacturing Company	
Starch Products										
Unmodified, food	❑	❑	❑	❑	❑	❑		❑	❑	
Unmodified, industrial	❑	❑	❑	❑	❑	❑	❑	❑	❑	
Modified, food		❑	❑			❑	❑	❑	❑	
Modified, industrial	❑	❑	❑	❑		❑	❑	❑	❑	
Dextrins	❑	❑				❑		❑	❑	
Cyclodextrins		❑						❑		
Refinery Products										
Glucose syrups	❑	❑	❑	❑	❑		❑	❑	❑	
Maltodextrins		❑					❑	❑	❑	
Dextrose monohydrate	❑			❑				❑	❑	
Dextrose anhydrous				❑				❑		
HFCS-42	❑	❑	❑	❑				❑	❑	
HFCS-55	❑	❑	❑	❑				❑	❑	
Crystalline fructose	❑								❑	
Co-Products										
Crude oil	❑		❑						❑	
Refined oil	❑		❑	❑					❑	
Corn gluten feed	❑	❑	❑	❑	❑	❑	❑	❑	❑	
Corn gluten meal	❑	❑	❑	❑	❑	❑	❑	❑	❑	
Corn germ or corn germ meal	❑	❑	❑	❑	❑	❑	❑	❑	❑	
Steepwater		❑	❑	❑	❑	❑	❑	❑	❑	
Carbon dioxide	❑				❑				❑	
Other										
Ethanol, fuel/industrial	❑		❑	❑	❑			❑	❑	
Ethanol, beverage	❑									
Fermentation and other chemicals	❑		❑					❑		

Product lists are accurate as of publication date but may change with time.

Products expanded its specialty starch operations in Indiana, and CPC International Inc. announced plans for a new corn oil facility in Argo, Illinois.

ADM Corn Processing posted new gains in biochemical production, and Penford Products Company launched a major expansion of its starch operation.

There was progress, too, on the product front. Both American Maize-Products Company and National Starch and Chemical Company released new modified food starches, including, from National, a line of customized starch-based fat replacements. Cyclodextrins made from corn are the basis for a new process to separate cholesterol from eggs, a process now under review by the Food and Drug Administration. On the industrial side, Penford expanded its line of modified starches for the paper and textile industry.

Expansions were also the name of the game at Staley. Production capacity for crystalline fructose doubled due to the increasing demand for this highly versatile product. An $8 million project tripled the company's production of granular starches used in a wide variety of food applications. A rapidly growing paper and textile market, combined with a technological breakthrough in the manufacturing process of hydroxyethylated starches, led to the third expansion in the past seven years for these products. STELLAR®, Staley's premier fact replacer, became available in commercial quantities in 1992 and is steadily gaining acceptance within the food industry.

Last year was not without its disappointments, however. Early in the year wet millers seemed poised for even greater expansion of ethanol capacity and corn usage, based on clean fuels regulations being developed at the Environmental Protection Agency. In February, ADM Corn Processing announced plant expansions intended to increase the company's ethanol production by 50 percent.

That expansion was put on hold when the EPA issued regulations that would have restricted ethanol's opportunity to compete in the clean fuels market. ADM halted its building plans for Decatur and Cedar Rapids at a cost of some 1,500 jobs, and CPC International's Pekin Energy unit delayed further expansion until ethanol's status was resolved.

Late in 1992, EPA agreed to revise its regulations to permit some - but not all - of the ethanol use envisioned under the 1990 Clean Air Act. In the transition to the Clinton

Growth of Refining Shipments

Year	Starch Products	Refinery Products	Oil Products	Feed Shipments	Total
			(in millions of pounds)		
1929	880	1,110	135	1,320	3,445
1934	765	1,700	140	1,240	3,845
1939	1,155	1,630	145	1,240	4,170
1944	1,515	2,630	205	1,765	6,120
1949	1,740	2,255	240	1,735	5,970
1954	2,150	2,435	255	1,980	6,825
1959	2,190	2,770	285	2,420	7,665
1964	2,495	3,850	365	3,120	9,830
1969	3,090	4,695	385	3,725	11,900
1974	3,910	7,085	435	4,845	16,275
1979	3,945	10,800	605	6,740	22,090
1984	4,185	17,920	985	10,940	34,030
1989	4,490	21,580	1,110	11,690	39,180
1990	4,960	22,770	1,130	11,460	40,930
1991	5,150	23,755	1,100	11,590	42,290
1992	5,420	25,490	1,030	13,220	45,845

Estimated from industry, government sources. Chart does not include shipments of alcohol or byproducts from alcohol production. Product categories may not match totals because of rounding. Statistics represent shipments by association members.

Administration, the proposed rules were withdrawn, released, withdrawn again and finally published in the *Federal Register*. Wet milling firms are now evaluating those rules, and the erratic government policy toward ethanol, as they plan for future growth in this market.

What will it take for our industry to continue its contribution to economic growth?

First, growth will depend on refiners themselves maintaining their century-and-a-half old drive to wring more value from corn while bringing the same efficiency to their use of other key inputs. Second, we must maintain a strong focus on our search for new and better products from corn.

Our success does not depend solely on our own efforts, however. Since government policies can make or break even the most competitive industry, we were pleased to see much of last year's political debate focused on the real effects government decisions have on U.S. business and its ability to create sustainable jobs. At the same time, refiners are concerned when, as in the ethanol decision, government delay and uncertainty forestall progress.

In one area after another—environmental policy, trade negotiations, transportation regulations, food standards—governments make choices that can hinder a growing industry or open the door to greater progress.

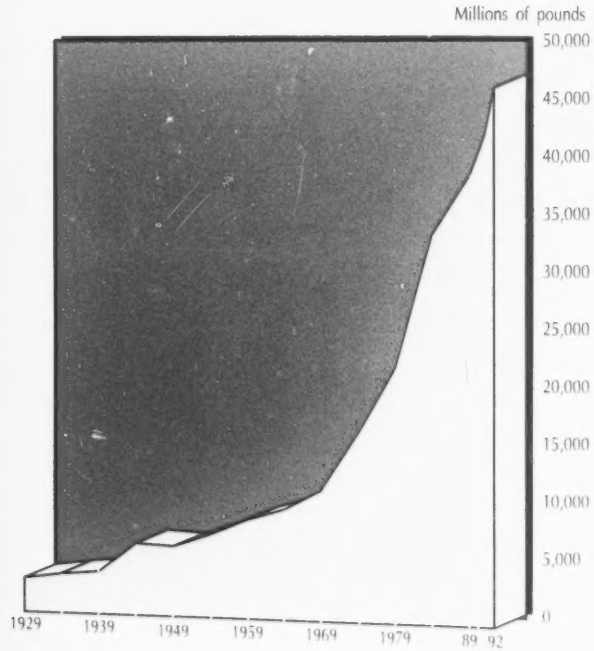
In 1993, corn refiners remain concerned about trade negotiations that could either create new opportunities for growth or stifle industry progress. Two major initiatives - the North American Free Trade Agreement (NAFTA) and the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) - remain unresolved.

NAFTA, although not without its costs, promises to bring new opportunities to the corn industry. Mexico, with its increasing per capita income and population, is a logical nearby market for U.S. starches, corn sweeteners and other products which are essential ingredients in industrialized food systems. Likewise, long-term elimination of Mexican restrictions on imports of U.S. corn will benefit American corn farmers and corn millers operating within Mexico.

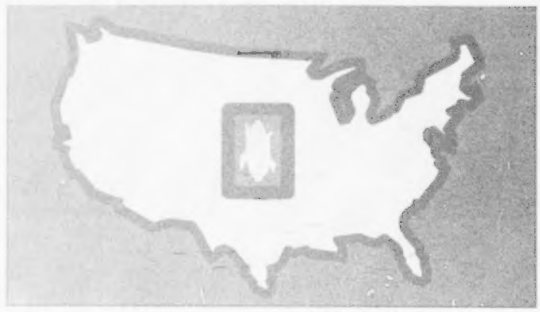
Last fall's apparent breakthrough in the GATT negotiations on farm policy between the U.S. and the European Community remains unconsummated. New leaders on both sides of the Atlantic have stepped back from last year's agreement, causing continued uncertainty over the future of this multi-billion dollar market for American agriculture. U.S. corn refiners, with nearly $1 billion in agricultural exports to Europe remain anxious that U.S. and E.C. leaders - with the help of other GATT members - reach a final resolution which will enable this important trade to continue.

Finally, corn refiners are joining with other American industries to support the efforts underway to reduce government spending and tame the budget deficit. As long as this millstone remains around the neck of American consumers and industries, the effectiveness of private efforts to increase economic efficiency will be limited.

Given a successful conclusion to the trade negotiations and real progress on the budget deficit, the efforts underway by corn refiners to increase production, employment and economic activity will yield increasing rewards in 1993 and the years to come.



Corn Refining: An Essential Player in the U.S. Economy



The corn refining industry's economic role begins with the specifics of annual business activity—a payroll of some $350 million to employ nearly 10,000 people, $2.7 billion worth of corn purchased, $2.3 billion worth of other inputs, $7.5 billion in capital investment, $7.5 billion worth of sales last year.

By themselves, the numbers are impressive. Take a closer look at the way their influence multiplies through the national economy, and the importance of corn processing to the United States comes sharply into focus.

Employment

For example, the Bureau of Labor Statistics estimates that in grain milling, every $1.5 million worth of production creates about 21 jobs throughout the U.S. economy. Last year, that meant corn refining sustained 40,000 jobs in industries like agriculture, energy, transportation, equipment and construction, beyond the direct employment in corn refining.

Jobs and job creation are major issues in the U.S. economy today, especially because of concerns that highly paid and highly skilled jobs in manufacturing industries are being replaced, too often, with low-paying jobs in service industries.

In corn refining, where the American industry is not just competitive but the world leader, jobs call for skilled employees with initiative, and pay is commensurate with those skills. Across the industry, the average annual pay for men and women working in wet milling is about $42,000.

Nor does the BLS estimate encompass all the jobs that flow from corn refining, since it does not factor in how wages spent by corn refining employees support unrelated businesses and industries.

The Balance of Trade

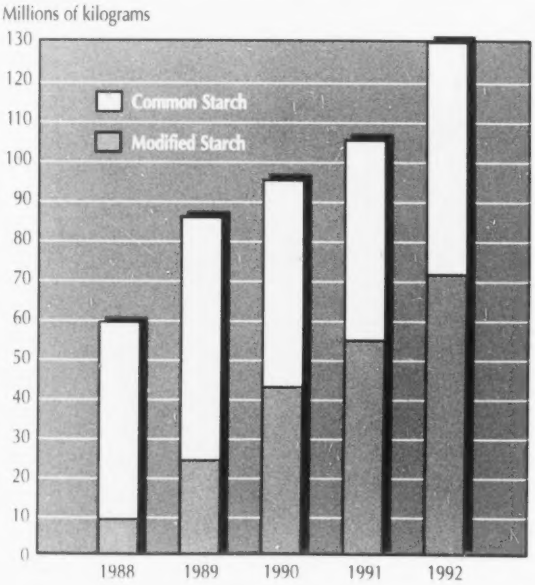
Included in industry sales is another major contributor to the nation's economy—a positive contribution to the U.S. balance of trade. Unlike jobs, which must be estimated, this can be readily quantified.

Last year, the corn wet milling industry exported $1.4 billion worth of processed products. Again, the economic importance reaches beyond the immediate export total.

Economists estimate that every one dollar worth of bulk commodity exports, like corn, produces $1.48 in business activity in the U.S. economy. But for value-added products like modified starches, corn gluten feed, corn gluten meal and refined corn oil, a dollar in exports means $1.70 in business activity. Last year, that adjustment meant an additional $300 million boost.

A separate measure of the importance of value-added corn products is the difference between the price U.S.

Starch and Modified Starch Exports



exporters received for those exports and the price they would have received for a like amount of corn. In 1992, exports of primary corn refining products represented 25 million bushels worth of corn. The export price received for those products was $154 million. In addition, exports of the oil and feed from 25 million bushels earned $48 million. The same 25 million bushels, exported as corn, would have earned $68 million, or $134 million less.

Corn refiners also benefit the balance of trade by reducing U.S. dependence on foreign imports. Among the many examples of this are the replacement of expensive vegetable gums with modified corn starches, the use of ethanol as a ten-percent component in gasoline, and, especially, the major shift from foreign sugar to domestically produced corn sweeteners.

Last year, Americans used 6.6 million short tons (dry basis) of high fructose corn syrup. Importing a comparable amount of refined sugar, under current market conditions, would have cost $3.2 billion.

In all, the industry's net contribution to a positive trade balance last year can be estimated at $5 billion.

Value-Added Market Development

While world commodity trade has stagnated in recent years, the growth market has increasingly been in value-added and high value agricultural products, an arena in which the U.S. has not performed as well as many of its competitors.

Corn refining is one U.S. industry that is increasing its value-added exports, despite international trade barriers. While the volume and value of refined corn exports in general have been growing, sales increases in products like modified starches and fully refined oil have been particularly encouraging. Within the world of value-added corn products, there is a shift toward higher value options.

As the accompanying graphs show, common starch exports have remained relatively unchanged, but higher value modified starch shipments have grown strikingly. Similarly, refined oil exports have increased at the expense of less-processed oils, except for 1991, when the Gulf war disrupted markets.

Government Spending

Just as corn refiners help the U.S. trade balance in two ways—by increasing exports and by reducing imports—they contribute to the U.S. government's spending equation by paying taxes and by reducing spending.

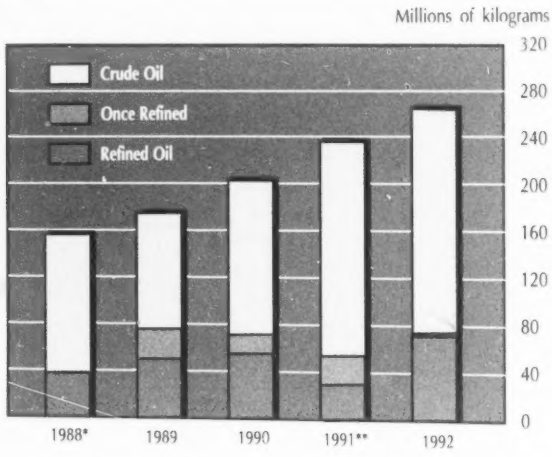
Refining companies, like other businesses, pay sales taxes on the materials they purchase, plus state and federal income taxes. One tax category alone, property taxes on

Exports of Products From Corn

Product	1992	Units	Value
Corn meal	124,035,376	Kilograms	$ 24,537,883
Corn starch	59,172,311	Kilograms	$ 34,644,270
Corn oil, crude	183,828,523	Kilograms	$112,548,287
Corn oil, once refined	3,943,211	Kilograms	$ 3,684,340
Corn oil, fully refined	72,524,900	Kilograms	$ 53,178,873
Glucose (dextrose)	32,310,870	Kilograms	$ 16,314,166
Glucose syrup not containing fructose or containing in the dry state less than 20% fructose	33,785,356	Kilograms	$ 12,852,696
Glucose syrup with 20-50% fructose	21,617,240	Kilograms	$ 5,906,360
Chemically pure fructose	16,760,406	Kilograms	$ 12,486,997
Fructose syrup with 50%+ fructose	70,101,932	Kilograms	$ 22,514,592
Fructose solids containing morethan 50% fructose	6,092,749	Kilograms	$ 5,720,746
Bran, sharps and other residues	146,981	Metric tons	$ 17,061,144
Corn gluten feed	5,638,960	Metric tons	$722,531,992
Corn gluten meal	550,939	Metric tons	$170,981,099
Other residues of starch manufacturing	473,945	Metric tons	$ 68,053,909
Corn oilcake	543,791,262	Kilograms	$ 71,426,858
Dextrins and other modified starches	71,297,612	Kilograms	$ 43,106,538

* Not Elsewhere Specified or Included
Source: U.S. Department of Commerce

Corn Oil Exports - Volume



* Crude and Once Refined Oil were the same classification in trade statistics prior to 1989.

** Oil export patterns were significantly disrupted in 1991 due to the Gulf War.

corn wet milling plants, is estimated at over $30 million annually. Corn refiners also pay a variety of user fees, such as grain inspection fees and inland waterway user fees. Further benefits flow to all levels of government from taxes paid by refining industry employees.

The corn processing industry also helps reduce government spending, particularly through its role as the one steadily growing sector in the corn economy. Higher corn prices, supported increasingly by refining industry demand, allow farmers to rely more on the market economy for their income and less on government deficiency and loan programs.

Last year, corn refiners used over 14 percent of the U.S. corn crop. As one indicator of the refining industry's importance to the federal budget, consider a 1990 study which showed that a 15 percent jump in corn stocks would reduce season average prices by nearly seven percent and increase the expense of the federal corn program by 20 percent over a five-year period.

Counting the ripple effect on other commodity programs for soybeans and wheat, the study concluded that related income reductions would cost the government almost $500 million per year in federal taxes and raise farm program outlays by $860 million annually.

Productivity and Investment

Corn refiners make another, less tangible contribution to the nation's economy because of their commitment to the continued progress that comes from generating new products, improving existing products, increasing efficiency in the use of resources and developing new technologies.

Major Export Markets for Refined Corn Products

World Corn Supply and Disappearance

	1991/92	1992/93
	Million Metric Tons	
Exports		
Argentina	6.0	6.5
South Africa	0.8	0.1
Thailand	0.6	0.5
China	9.3	8.0
United States	40.6	42.5
Others	4.7	1.9
TOTAL	**61.9**	**59.5**
Imports		
Mexico	1.1	1.6
European Community-12	2.0	2.0
Former USSR	10.4	7.4
Japan	16.2	16.2
Eastern Europe	0.2	0.8
China	0.0	0.0
Taiwan	5.3	5.4
Republic of Korea	6.2	6.7
Others	20.6	19.4
TOTAL	**61.9**	**59.5**
Production		
Brazil	28.5	25.0
Mexico	14.5	15.0
Argentina	10.6	10.0
South Africa	3.3	8.0
Thailand	3.6	3.6
European Community-12	26.7	27.8
Former USSR	9.0	9.1
Eastern Europe	33.7	24.3
China	98.8	93.0
United States	189.9	240.8
Others	66.0	67.5
TOTAL	**484.6**	**524.0**
Utilization		
European Community-12	27.8	28.8
Former USSR	21.1	17.6
Japan	16.2	16.1
China	85.2	87.9
United States	160.8	169.8
Others	174.1	180.5
TOTAL	**485.2**	**500.7**
Ending Stocks		
Foreign	51.9	46.1
United States	27.9	57.1
TOTAL	**79.9**	**103.2**

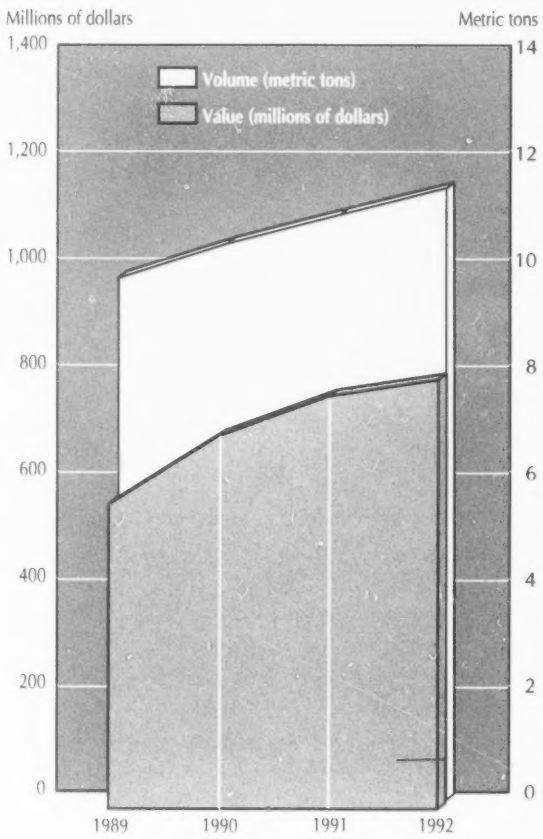
Source: USDA
Based on October/September year in millions of metric tons.
1992/93 represents a forecast total.

At a time when some industries are desperately trying to catch up with foreign competitors, the U.S. corn refining industry is the world leader. Further, refiners are investing constantly in the new technology and new products that will continue that leadership.

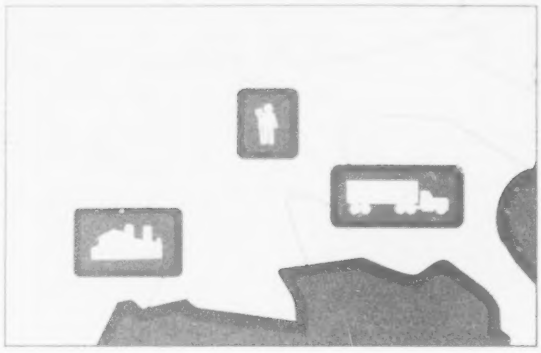
Amid all the discussion about "investing in the future" and improving U.S. productivity, corn refining is a practical example of an industry that achieves what others talk about, an industry that can lead the way for others to follow.

Ultimately, this industry contribution to the U.S. economy may prove as valuable as specifics like job creation and export market development.

Total Exports - Refined Corn Prorducts



Corn Refineries: Benefiting Local, Regional Economies



Cities like Cedar Rapids, Iowa, and Decatur, Illinois, can see first-hand how corn wet milling helps the local economy. When thousands of local people go off to work each day at a refining plant, when refiners pay over $6 million in local property taxes, the message is obvious.

But for every Decatur, there are 20 other communities across the U.S. whose benefits from corn refining come so indirectly that few realize how much the industry contributes to economic growth.

Look first at the top 500 corn-producing counties, according to the 1987 Census of Agriculture (page 13).

In top ranked counties like Yuma County, Colorado; McLean County, Illinois; Phelps County, Nebraska; or Kossuth County, Iowa, the increased price farmers get for their corn as a result of refining demand may contribute as much as $9 million annually to county income.

In mid-range producing counties, increased income through farmers' corn sales can range from $2.5 to $5 million per county. Even in counties at the lower end of the production scale, the annual increases from corn refining demand alone will total more than $1 million each.

All told, corn refiners purchased $2.5 billion worth of corn last year and affected the sales price of the entire crop by an estimated $2 billion.

From farmers, that income flows to seed dealers, agricultural chemical companies, landowners, and fuel suppliers, then, in a second transfer, to suppliers to those businesses.

As corn refining demand helps a farmer buy a new combine, its benefits are spread further to the local equipment dealer, the state government (through sales taxes and title fees), the trucker who delivered the combine, the equipment manufacturer and his employees, the steelworkers who rolled the sheet metal for the combine and iron and coal miners who provided the raw materials for the steel.

But corn is only one of the wet milling industry's essential inputs. Refiners also buy transportation equipment and services, manufacturing equipment, process chemicals, energy and utilities, computer services, and a wide variety of administrative and contract services from suppliers across the nation.

Industry estimates suggest that other inputs involve almost $2.5 billion worth of goods and services every year.

For example, corn wet millers are important customers for the transportation industry, beginning with local trucking firms that bring corn from the surrounding area to each plant. Some plants require as many as 400 to 500 truck loads of grain daily, producing the kind of consistent demand that underpins economic stability and reliable jobs.

Refiners are also important to the rail industry, which brings essential raw materials into the plants and provides a major mode for shipping final products to the marketplace, and to barge operators carrying refined feed products

Annual Purchases of the Corn Refining Industry

State	Annual Industry Purchases
Illinois	$730,000,000
Iowa	$265,000,000
Indiana	$230,000,000
Tennessee	$145,000,000
Texas	$130,000,000
Minnesota	$ 80,000,000
Ohio	$ 65,000,000
Pennsylvania	$ 60,000,000
California	$ 50,000,000
North Carolina	$ 45,000,000
Virginia	$ 45,000,000
Alabama	$ 35,000,000
Wisconsin	$ 30,000,000
New York	$ 30,000,000
Kentucky	$ 25,000,000
Michigan	$ 25,000,000

Based on industry estimates

to Gulf ports. All told, refiners use some $750 million worth of transportation services and equipment annually.

From computer systems for process control, to grinding mills, centrifuges, large-scale rotary dryers, filters, and the latest pollution control equipment, corn refining plants represent a major investment in machinery and process equipment. As corn wet millers replace older units and continue their modernization efforts, they commonly purchase more than $550 million worth of manufacturing equipment annually.

For U.S. chemical companies, refiners represent an important market for long-established chemical components and for state-of-the-art products ranging from separation membranes and ion exchange resins to the latest generation of enzymes. In fact, corn refining demand was a critical factor in the development of the U.S. enzyme industry and still represents the largest single customer for enzymes. All told, corn wet millers use some $300 million worth of process chemicals each year.

Another half-billion dollars pays the bills for energy and utilities required in refining. Among other contributions, corn refiners have become major participants in the cogeneration movement, which helps control energy costs while making more efficient use of energy resources.

Six states -- Iowa, Illinois, Indiana, Missouri, Tennessee and Texas -- gained from $130 million to as much as $730 million worth of business from refinery purchases of energy, transportation, chemicals and other non-corn inputs. For four more states, corn refiner demand produced from $50 to nearly $100 million in sales: California, Minnesota, Ohio and Pennsylvania.

In even more states, wet milling purchases are supporting the growth of individual companies in supplier industries. Last year, at the Corn Refiners Association Scientific Conference, the list of suppliers attending included companies from Florida, Pennsylvania, Illinois, Wisconsin, Massachusetts, West Virginia, New Jersey, Iowa, Michigan, New York, Connecticut, Indiana, Minnesota, Tennessee, Nevada and Ohio.

Top 500 Corn Producing Counties - 1987

Source: Department of Commerce, Census of Agriculture

Any assessment of this industry's local and regional economic importance must also take into account its direct contribution through the plants themselves.

The initial benefit comes with plant construction. Analysts suggest that refiners spend at least $2,000 on construction for every bushel of daily grind. Thus, even a small plant designed to grind 50,000 bushels per day will cost about $100 million to build and bring on line.

A larger plant may cost as much as $250 million for land, design and construction and require over four million man hours of labor. In the process, local economies gain especially from construction employment. Economists estimate that every million dollars spent on a plant produces 14 to 15 construction jobs; the new Cargill refinery being built in Blair, Nebraska, could produce as many as 3,750 jobs during the construction phase.

The boost from plant construction is nothing, however, compared to the steady benefit, year after year, of plant operations.

Twenty-seven corn wet milling plants currently operate in the United States, with several other plants either under construction or in the planning stages. Refining operations vary in size and employment, reflecting in part the difference between highly specialized operations like Pekin Energy, which focuses solely on ethanol as its primary product, and broadly diversified facilities like A. E. Staley Manufacturing Company's Decatur, Illinois, plant, which produces common corn starch, a wide array of modified food and industrial starches, glucose syrups, dextrose, high fructose syrups and more.

Typically, a smaller scale refinery will employ 125 people with a local payroll of about $4 million per year. Property taxes, which differ based on the state tax structure, can be as high as $1 million annually, but are more likely to fall in the $600,000 range.

Mid-sized refineries provide jobs for about 275 people each, pumping $11,000,000 worth of income into the local economy. They may pay as much as $2.1 million per year

States Supplying Materials and Services to Corn Refining

in property taxes, although the average is about $1.3 million.

At the top end of the scale are the mega-refineries, with work forces that average about 550 people, annual payrolls of about $24,000,000 and a median property tax of $2.3 million per year.

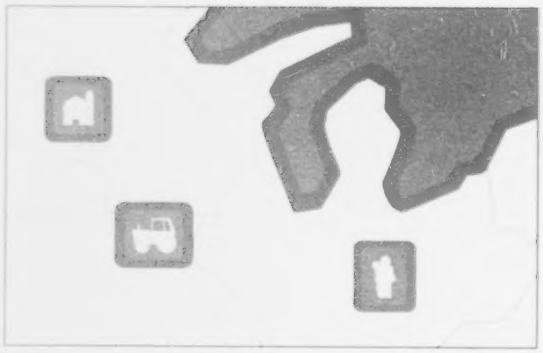
All told, corn refiners pump nearly $350 million dollars into local economies through the paychecks of some 8,500 people at plant sites. In addition, local governments benefit from $31 million worth of property taxes that wet millers pay each year on plants worth almost $6.5 billion (replacement value).

Those direct payments don't mark the end for refining's economic impact. Like a magnet, a corn wet milling plant attracts other businesses to serve its needs -- businesses that, in the process, create jobs and pay their own property taxes. At refinery after refinery, trucking firms have located in the plant's shadow to provide transportation services. Other companies supply electrical and construction maintenance and other contract services. Cogeneration operations sprout to provide energy. On the user side, industries like biotechnology that rely on corn products as feedstocks build their own plants in cities like Cedar Rapids, Iowa, because of the corn refining presence.

In direct payments alone, the corn refining industry contributes over $6 billion to local and regional economies through the wages it pays and the essential supplies and services it buys. Its economic role is far greater when one-time investments like new plant construction or indirect effects like support for corn prices are included.

In the end, many thousands of Americans, knowingly or not, in the Midwest or in states like Alabama, Pennsylvania, Virginia and New York depend on corn wet milling for their jobs and businesses.

For Farmers: Steady Demand Growth in the Volatile Corn Economy



Corn farmers, more than any other group in the U.S. economy, have a real understanding of the corn refining industry's importance.

For farmers, refining industry growth has provided one of the few steady factors underpinning corn prices.

Within the last decade, export demand for corn has varied from lows of 1.2 billion bushels to highs of 2.4 billion bushels. This year, while U.S. farmers have a record crop to market, export demand is expected to reach only 1.6 billion bushels, a lower figure than the U.S. posted in 1975.

Continued world recession and the ongoing economic crisis in former Soviet nations suggest that building exports will be tricky for some years to come.

Feed use, too, has varied from 3.8 billion bushels to 5.2 billion bushels in the last ten years. While the general trend line has been positive, hard times in the feed industry can still mean major swings in corn demand.

Corn Refining's Contribution to Farmer Income

State	1987 Production	Refining Contribution
Iowa	1,306,500,000	$326,625,000
Illinois	1,201,200,000	$300,300,000
Nebraska	812,200,000	$203,050,000
Minnesota	635,000,000	$158,750,000
Indiana	631,800,000	$157,950,000
Ohio	362,400,000	$ 90,600,000
Wisconsin	330,400,000	$ 82,600,000
Missouri	242,950,000	$ 60,737,500
South Dakota	228,250,000	$ 57,062,500
Michigan	185,250,000	$ 46,312,500
Kansas	141,600,000	$ 35,400,000
Texas	133,750,000	$ 33,437,500
Kentucky	118,560,000	$ 29,640,000
Colorado	106,950,000	$ 26,737,500

Unpredictability is also the rule on the supply side. As late as May, 1992, USDA projected production of 8.6 billion bushels for last fall's record-setting crop of 9.3 billion bushels.

Set against the background of these variables, an industry that has steadily built its demand from 659 million bushels in 1982 to over 1.1 billion bushels this crop year represents not just a valuable market but a measure of stability for corn markets.

When exports drop precipitately or farmers find themselves with an unexpectedly large crop, refining demand helps to limit price declines. Conversely, when production is short and demand high, refiners contribute significantly to higher farm profits.

The exact impact of refining varies from year to year. Currently, a 100 million bushel change in refining demand would swing corn prices by about $.04 per bushel in the short term. Studies in the early 1980s suggested that new demand for corn sweeteners at that time was contributing $.25 per bushel to the price of corn.

The price benefits of refining demand affect corn farmers generally; when a refiner in Iowa buys a million bushels, that's one million fewer bushels competing with Minnesota or Missouri or Ohio corn in the export and feed markets.

Still, farmers located near refining plants do find some additional benefits. For example, increasing industry emphasis on special varieties of corn, like high amylose corn and waxy maize, have opened the door for farmers close to some refining facilities to raise these varieties under contract, at a premium price.

Some Minnesota and Nebraska farmers have found another way of benefitting from corn refining -- as shareholders in cooperatively-owned refining plants. Other farmers with livestock operations profit from an accessible supply of wet corn gluten feed for use in dairy cattle rations.

What does refining-supported income mean for farmers?

In 1987, the last year for which Census of Agriculture data is available, U.S. farmers harvested 7.1 billion bushels

of corn. Assuming conservatively that corn wet milling demand contributed $.25 to the price of each bushel of corn, refiners contributed from $27 million to $327 million to farmers incomes in majaor corn producing states (see chart, page 15).

This boost translated into serious increases in farmers' purchasing power in 1987.

For Iowa farmers, it more than paid for all the agricultural chemicals (excluding fertilizer) used on all crops that year. In Illinois, the corn refining contribution was enough to cover the interest secured by real estate for all the state's farmers.

In Nebraska, income from wet milling demand paid the cash rent, statewide, and in Minnesota, it covered all farm costs for labor, hired and contract. Indiana farmers could buy more than 90 percent of their petroleum products with their $158 million,

In Ohio, it covered all farm property taxes, and in Wisconsin it paid the bill for all gasoline and gasohol, with $10 million left over.

Since then, corn refining demand has grown by 20 percent and, with the pace of technical innovation accelerating as it has in modern times, is expected to climb to two billion bushels by 2001, making corn wet milling even more important to corn farmers.

That increase is expected to come from several different developments.

Ethanol, which has gained the most attention in recent years, can be expected to swell corn demand by hundreds of millions of bushels if it is allowed a fair chance to compete for clean fuel markets required by U.S. environmental laws. The realization of ethanol's potential, when it comes, will be due not only to the technical advances in the wet milling industry but to corn farmers themselves, who have campaigned actively for ethanol in the policy arena.

Corn sweeteners, from glucose and high fructose syrups to dry products like crystalline fructose and dextrose, will continue to grow to supply a growing population. These products may have even more potential, if Canada, Mexico and the United States are able to implement a free trade agreement that opens the Mexican market to U.S. corn products.

Newly developed starches and improved methods of using current starches will increase the demand for corn products in major paper and textile markets. In addition, the ongoing shift to recycled paper will require additional corn starch in order to maintain paper quality.

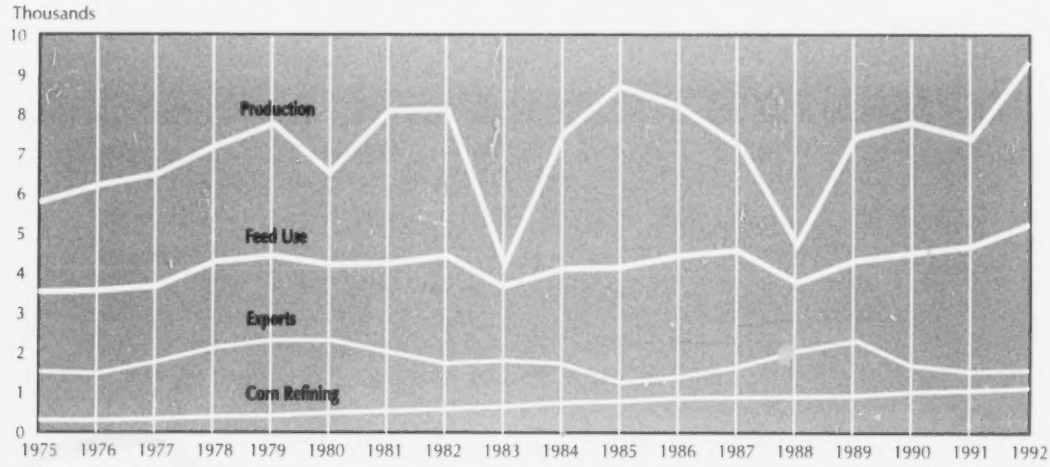
While traditional food starch applications will increase due to population changes, corn refiners are also pursuing new applications for food starches in quick-preparation and

Corn: Supply and Disappearance

	Supply				Disappearance						Ending Stocks		
					Domestic Use								
Year beginning September 1	Beginning stocks	Production	Imports	Total	Food, alcohol and Industrial	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned	Total
					Million bushels								
1983/84	3,523.1	1,174.3	1.7	7,699.1	911.0	19.1	3,876.3	4,806.4	1,886.4	6,692.8	201.5	804.8	1,006.3
1984/85	1006.3	7,672.1	1.7	8,680.2	1,046.0	21.2	4,114.5	5,181.7	1,850.3	7,032.0	224.9	1,423.3	1,648.2
1985/86	1,648.2	8,875.5	9.9	10,533.6	1,133.0	19.5	4,114.2	5,266.7	1,227.3	6,494.1	545.7	3,493.8	4,039.5
1986/87	4,039.5	8,225.8	1.8	12,267.0	1,206.8	16.7	4,669.4	5,892.9	1,492.5	7,385.3	1,443.2	3,438.5	4,881.7
1987/88	4,881.7	7,131.3	3.4	12,016.4	1,226.0	17.2	4,797.7	6,040.9	1,716.4	7,757.3	835.0	3,424.1	4,259.1
1988/89	4,259.1	4,928.7	2.8	9,190.6	1,275.0	18.4	3,941.0	5,234.4	2,025.8	7,260.1	362.5	1,567.9	1,930.4
1989/90	1,930.4	7,525.5	1.9	9,457.8	1,337.0	18.9	4,389.2	5,745.1	2,368.2	8,113.4	233.0	1,111.5	1,344.5
1990/91	1,344.5	7,934.0	3.4	9,281.9	1,347.9	19.3	4,668.8	6,036.0	1,724.6	7,760.7	371.1	1,150.1	1,521.2
1991/92*	1,521.2	7,475.5	19.6	9,016.4	1,413.6	20.2	4,898.2	6,331.9	1,584.1	7,916.1	112.5	987.8	1,100.3
1992/93**	1,100.3	9,478.9	3.0	10,582.2	-- 1,495.0 --			5,200.0	6,695.0	1,650.0	8,345.0	45.0	2,192.2	2,237.2

* Preliminary
** Projected
Source: USDA

Corn Production and Increases in Use: 1975 to 1992



Source: USDA and industry estimates

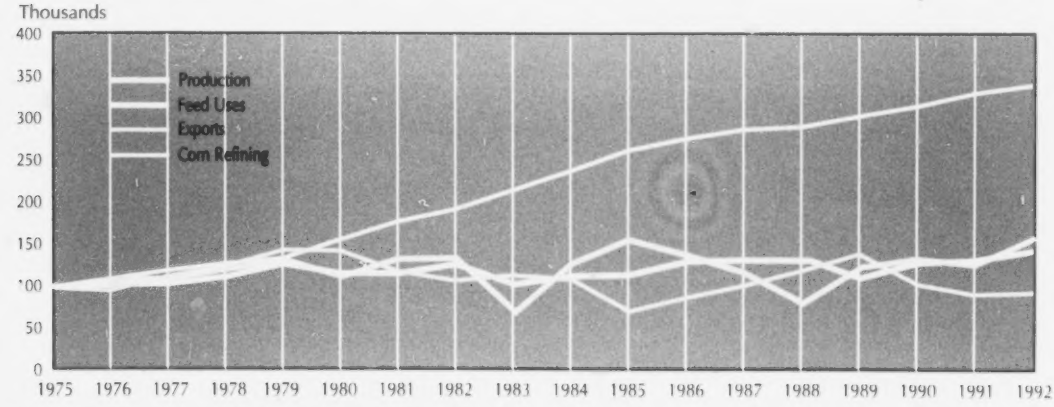
microwavable products and in new, "light" food recipes that reduce fat and cholesterol levels.

Refined corn products are finding new markets as feedstocks in biotechnology-based and fine chemicals to produce amino acids, organic acids, enzymes, vitamins and replacements for other natural and synthetic polymers.

While starch-based plastics are already on the market in some products, this starch application represents significant untapped potential, and refiners are actively pursuing research and development of new starch-based polymers that will increase demand.

Most of these developments will hardly be news to corn farmers, who have followed the potential in corn refining closely and supported many industry advances in recent years. But, as they are realized, will they confirm again the close partnership between corn producers and the U.S. corn wet milling industry.

Percent Change: Corn Production and Uses



Source: USDA and industry estimates

Note: A graph of percent changes in corn production and use categories gives a clearer picture of the volatility corn farmers face. This graph uses 1975 as a base year for all categories, then measures how each component (production, feed use, exports, refining use) varies each year compared to 1975.

Refined Corn Products: Solving Customers' Problems, Saving Money

Perhaps the least measurable of the refining industry's economic contributions flows from the benefits refined corn products provide to user industries and, ultimately, to American consumers.

How can economists quantify the economic effect of thousands of instances in which refining provides an essential ingredient, solves a technical problem, offers a lower-cost alternative, helps a processor boost productivity or answers a new need?

Instead of statistics, consider these instances from specific industries:

Fermentation: Drugs, Chemicals, Beverages

Try to measure the economic benefits of penicillin. One of the shining events in corn refining's history is the role the industry played in providing penicillin for the Allied war effort in World War II. Then a new "wonder drug" with the potential to save thousands of wounded servicemen from infections, the penicillin-producing mold was notoriously tricky to grow in the quantities needed. The answer to mass penicillin production proved to be steepwater, a corn refining feed product that is still used as a feedstock in fermentation processes today.

In modern times, refined corn products continue their importance as feedstocks. Increasingly, amino acid producers use dextrose, from corn, as their feedstock because its consistent quality helps them run their fermentation processes more efficiently and achieve better end products.

The refining industry's growing production of feed-grade amino acids, enzymes and citric acid—an expansion which has significantly reduced U.S. dependence on foreign sources—has its foundation in the ready supply of corn-based feedstocks like dextrose.

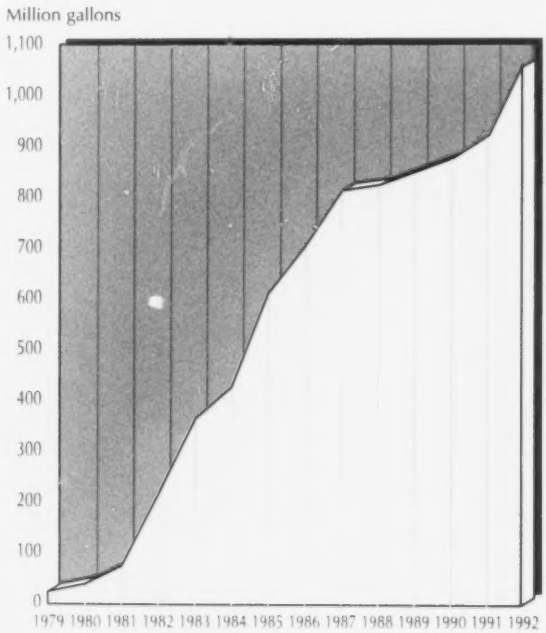
Similarly, corn refining is underpinning the growth of other fermentation processes in antibiotics, in brewing, in industrial chemicals and in the fledgling biotechnology industry.

Paper and Printing

Corn refining's economic importance to a sequence of user industries and consumers may be easiest to document in the case of the paper industry.

Refined corn products benefit paper and cardboard makers in a wide variety of ways. In the U.S. corn starch is an essential ingredient, supplying 84 percent of the natural binders U.S. papermakers require. Corn starches bind

U.S. Fuel Ethanol Consumption



Source: Renewable Fuels Association

wood fibers together in the initial papermaking steps, are applied as sizing to improve paper finish, and serve as the essential binders in the coatings of slick papers.

In the process, they solve technical problems for papermakers, such as improving fiber retention and reducing pollution in wastewater streams. They also help achieve higher industry productivity; by strengthening the paper itself, starches allow papermakers to run production lines at nigher speeds, achieving more output with less down time.

Corn starches are also contributing to new paper industry trends, including the growing demand for recycled paper (which requires more starch to compensate for shorter pulp fibers) and for alkaline papers (a higher quality paper produced at less cost).

In two concrete examples of the industry's contribution, corn refiners recently modified a starch product to eliminate dusting problems for one paper maker, saving the customer a capital expense and producing a safer workplace. In another case, refiners developed a different system for applying starch to solve a newsprint maker's problem with "two-sidedness," where the top and bottom sides of the paper were inconsistent. The solution helped the paper mill stay competitive and offered new business opportunities to other newsprint mills.

Nor do the advantages end with the paper maker. Across the country, the stronger paper stocks achieved with corn-based ingredients allow printers to operate at higher speeds and increase productivity.

Ultimately, as refiners, papermakers and printers boost productivity and control costs, the consumer gains better paper and printed products at a more reasonable price.

Cardboard and Shipping

Name the company that doesn't, sooner or later, rely on cardboard, either in the supplies it receives or the products it ships. As in papermaking, corn starches are an important ingredient in cardboard production, not only in the draft paper but in the adhesives that bind cardboard into its distinctive form. Again, corn wet millers have developed better starch products that allow cardboard manufacturers to increase line speed and productivity. Shippers benefit, too, from that productivity's effect on shipping material prices and from the increase in water resistance provided by corn starches, decreasing losses from damage in shipping.

Construction

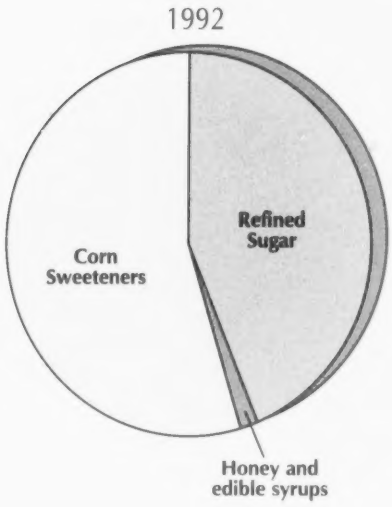
As in so many other products, corn starch is an essential but unseen ingredient in producing construction supplies

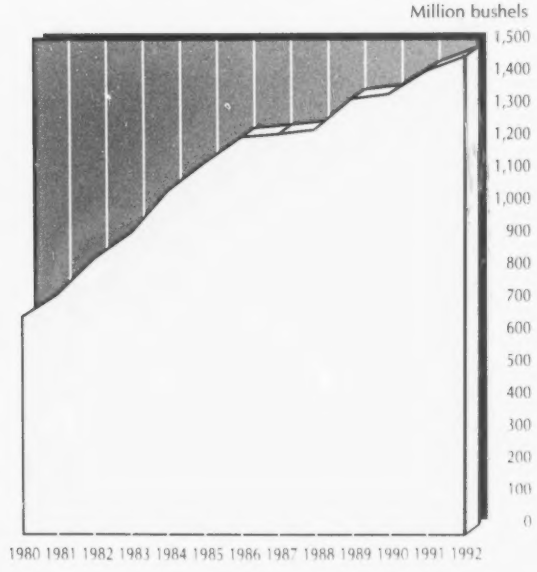
Corn: Food, Seed and Industrial Uses

Year	HFCS	Glucose and Dextrose	Starch	Fuel Alcohol	Beverage Alcohol	Cereals and other products	Seed	Total
				Million bushels				
1980	165	156	151	35	78	54	20	659
1981	183	160	146	86	86	53	19	733
1982	214	165	150	140	110	60	15	854
1983	265	167	170	160	88	70	19	930
1984	310	167	172	232	84	81	21	1,067
1985	327	169	190	271	83	93	19	1,152
1986	338	171	214	290	85	109	16	1,223
1987	358	173	226	279	77	113	17	1,243
1988	361	182	223	287	107	114	19	1,293
1989	368	193	230	321	109	115	19	1,355
1990	379	200	232	344	80	114	19	1,368
1991	392	210	237	378	81	116	20	1,434
1992	410	215	240	410	83	117	20	1,495

Source: USDA - Economic Research Service
Year beginning Sept. 1

Per Capita Sweetener Consumption





like gypsum or plasterboard. Beginning with the post-World War II building boom and continuing to this day, plasterboard has replaced the longer, slower process of plastering, allowing builders to put up interior walls in hours rather than days and to control building costs.

Food Processing

Many people are aware of corn sweeteners as economical replacements for sugar in products like soft drinks. Far fewer recognize their contributions to product quality and shelf life. There's a major economic loss when bread and baked goods go stale too quickly, ice cream forms crystals and is wasted, or canned fruits spoil.

Corn sweeteners make life easier for food processors and save them money in such cases—as moisture conditioners that help prevent staling, as inhibitors that keep ice cream and jellies free of crystals, and as agents to prevent microbial spoilage.

They also widen the range of temperatures at which processors can use sugars, providing more flexibility in processing. They provide texture and browning in baked goods, keep lollipops from dripping, and aid in maintaining the bright red color of catsups.

Other refined corn products offer additional benefits in foods. For example, corn starches that have been modified for candy making allow manufacturers to produce more candy in less time and improve candy stability.

A particularly intriguing example of the economic benefits from corn starch involves beverage emulsion starches which replace gum arabic. Recent droughts in Africa have threatened supplies of gum arabic and made this import expensive for food processors. In contrast, corn-based emulsion starches from the wet milling industry are domestically produced, available at a lower cost and can be used at lower levels in food products, all of which benefit the food manufacturer. In addition, corn starches provide a cleaner, purer ingredient than gum arabic, which can present problems from trapped insects and dirt. This single corn starch application, then, has produced multiple economic advantages, providing an essential ingredient, reducing manufacturers' costs and producing a better product for consumers.

While such cases are repeated across the food processing industry, more attention typically goes to the development of new products that meet changing consumer needs and trigger industry growth. Often, refined corn ingredients are critical players behind the scenes in achieving those new products.

U.S. Per Capita Sweetener Consumption

	Refined Sugar	HFCS	Corn Sweeteners			Honey and Edible Syrups	Total Sweeteners
			Glucose	Dextrose	Total		
			Pounds, dry basis				
1985	62.7	44.9	18.1	4.2	67.2	1.4	131.3
1986	60.0	45.6	18.3	4.2	68.1	1.4	129.5
1987	62.4	47.2	18.5	4.3	70.0	1.4	133.8
1988	62.1	48.5	18.8	4.3	71.6	1.4	135.1
1989	62.8	49.4	19.3	4.4	73.1	1.4	137.3
1990	64.4	50.3	20.1	4.5	74.9	1.4	140.7
1991	63.7	51.4	20.7	4.5	76.6	1.4	141.7
1992*	64.5	51.7	21.1	4.5	77.3	1.4	143.2

Source: Economic Research Service, USDA
* Preliminary

Corn starches and sweeteners have played an essential role in major developments ranging from frozen and microwavable foods to instant mixes, shelf-stable products, and low-calorie, low-fat choices.

Clean Fuels

Ethanol, produced in this country primarily by wet millers, offers another example of economic benefits. Ethanol got its first boost as a fuel extender, offering a more economical alternative to skyrocketing oil prices in the 1970s. Later, when oil prices had dropped, it helped fuel companies solve an environmental problem by replacing lead as an octane-enhancing fuel ingredient.

Most recently, as states and municipalities struggle to achieve cleaner air, ethanol, used as a fuel oxygenate, provides one of the easier, less expensive routes to control problems like carbon monoxide.

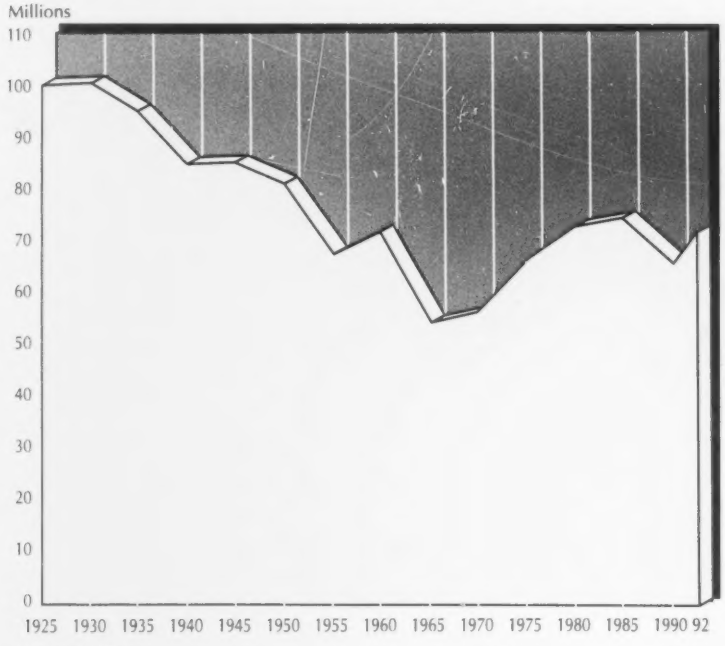
This spring, the Environmental Protection Agency announced that 20 areas operating the oxygenated fuel program for the first time exceeded carbon monoxide levels only two days last winter, compared to 43 days the year before. "Preliminary data suggest the reductions in CO levels are largely attributable to the oxygenated fuel program," EPA concluded.

In sector after sector of the U.S. economy—food, medicines, paper, building, energy, and more—corn refining offers major economic benefits to companies and whole industries. Ultimately, even if economists can't place a dollar amount on such varied and complex contributions, those benefits accrue to American consumers in the form of lower costs for better, safer products.

Corn: Acreage Harvested and Yield Per Acre

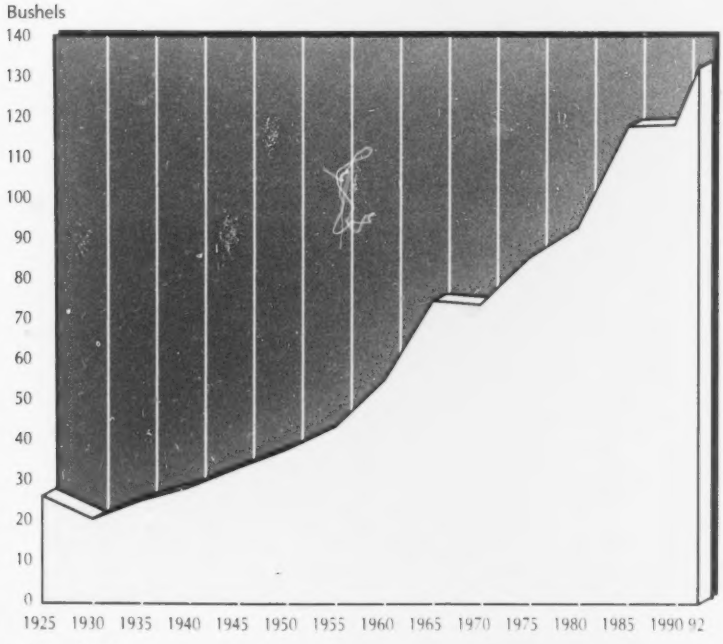
Year	Acreage Harvested	Bushels Per Acre
1925	101,331,000	27.6
1930	101,465,000	20.5
1935	95,974,000	24.0
1940	86,429,000	28.4
1945	87,625,000	32.7
1950	81,818,000	37.6
1955	68,462,000	42.0
1960	71,422,000	54.7
1965	55,392,000	74.1
1970	57,358,000	72.4
1975	67,625,000	86.4
1980	72,961,000	91.0
1985	75,224,000	118.0
1990	66,952,000	118.5
1992	72,144,000	131.4

Acreage Harvested



Source: USDA

Bushels Per Acre

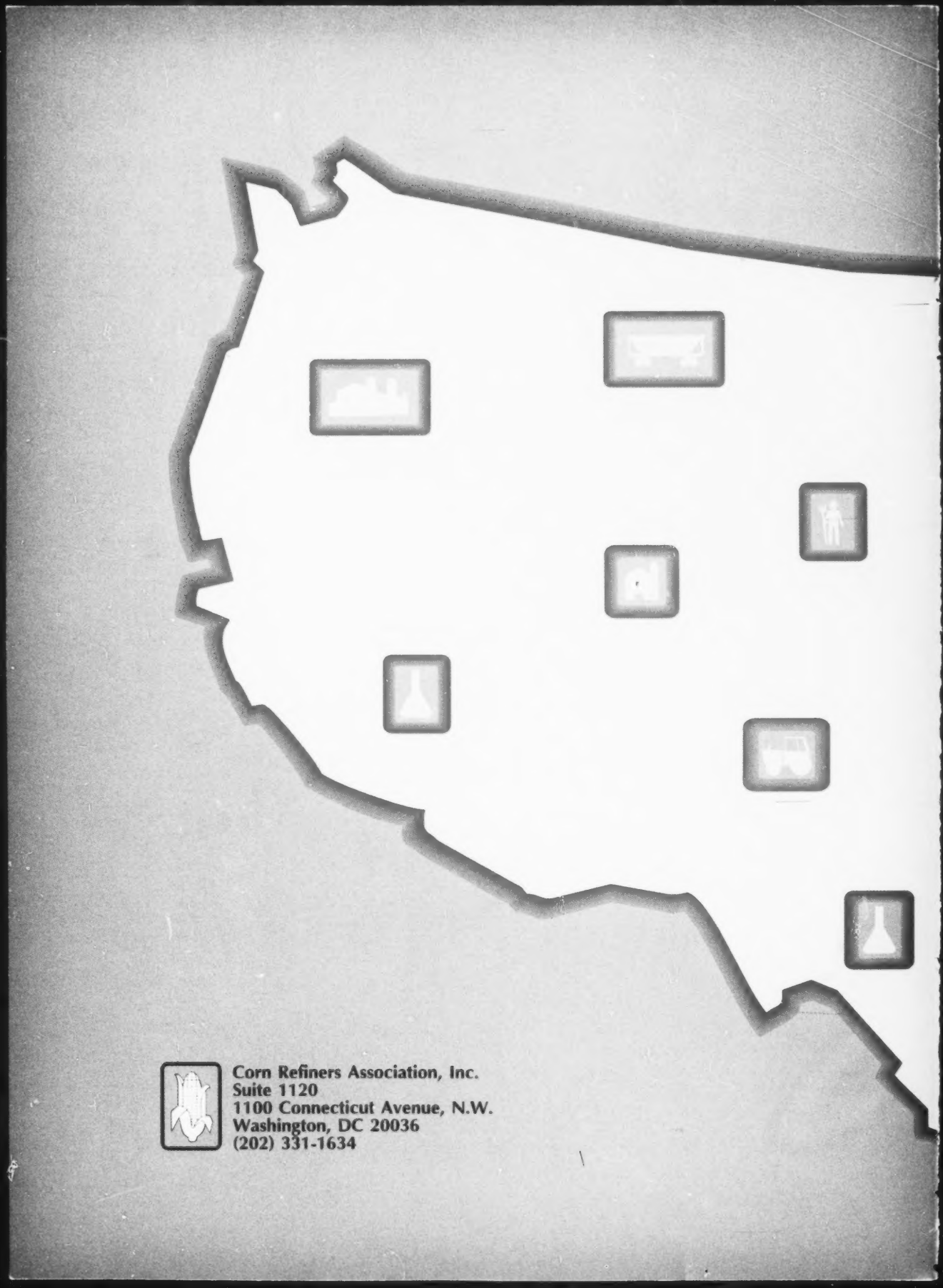


Source: USDA

U.S. Corn for Grain: Yield and Production

	Area Harvested			Yield			Production		
	1990	1991	1992	1990	1991	1992	1990	1991	1992
	1,000 Acres			*Bushels*			*1,000 Bushels*		
AL	240	210	320	58	80	94	13,920	16,800	30,080
AZ	7	5	11	160	170	170	1,120	850	1,870
AR	73	80	95	95	100	130	6,935	8,000	12,350
CA	160	115	145	160	160	165	25,600	18,400	23,925
CO	830	840	835	155	153	148	128,650	128,520	123,580
DE	172	169	161	115	106	119	19,780	17,914	19,159
FL	75	75	110	71	68	75	5,325	5,100	8,250
GA	550	550	690	68	100	100	37,400	55,000	69,000
ID	30	63	33	130	125	130	3,900	7,875	4,290
IL	10,400	11,000	11,050	127	107	149	1,320,800	1,177,000	1,646,450
IN	5,450	5,450	5,970	129	92	147	703,050	510,600	877,590
IA	12,400	12,200	12,950	126	117	147	1,562,400	1,427,400	1,903,650
KS	1,450	1,650	1,730	130	125	150	188,500	206,250	259,500
KY	1,200	1,250	1,300	100	89	132	120,000	111,250	171,600
LA	186	247	309	116	85	120	21,576	20,995	37,080
MD	450	450	470	118	95	124	53,100	42,750	58,280
MI	2,070	2,300	2,300	115	100	105	238,050	253,000	241,500
MN	6,150	6,000	6,500	124	120	114	762,600	720,000	741,000
MS	140	150	300	80	75	90	11,200	11,250	27,000
MO	1,960	2,200	2,400	105	97	135	205,800	213,400	324,400
MT	9	15	25	95	120	110	855	1,800	2,750
NE	7,300	7,800	7,900	128	127	135	934,400	990,600	1,066,500
NJ	75	77	82	118	110	120	8,850	8,470	9,840
NM	55	60	71	145	165	160	7,975	9,900	11,360
NY	620	660	670	98	98	92	60,760	64,680	61,640
NC	1,070	950	1,040	68	90	95	72,760	85,500	98,800
ND	460	570	580	80	90	63	36,800	51,300	36,540
OH	3,450	3,400	3,550	121	96	143	417,450	326,400	507,650
OK	88	85	135	114	110	130	10,032	9,350	17,550
OR	18	15	15	150	146	150	2,700	2,190	2,250
PA	970	860	990	113	75	120	109,610	64,500	118,800
SC	320	255	350	45	85	88	14,400	21,675	30,800
SD	3,000	3,250	3,300	78	74	84	234,000	240,500	277,200
TN	510	510	640	86	86	124	43,860	43,860	79,360
TX	1,450	1,500	1,620	90	110	125	130,500	165,000	202,500
UT	19	21	24	140	140	135	2,660	2,940	3,240
VA	365	335	345	100	84	116	36,500	28,140	40,020
WA	80	80	88	175	180	180	14,000	15,840	15,840
WV	50	38	50	105	75	108	5,250	2,850	5,400
WI	3,000	3,200	2,950	118	119	104	354,000	380,800	306,800
WY	50	49	40	120	119	98	6,000	5,831	3,920
US	66,952	68,842	72,144	118.5	108.6	131.4	7,933,068	7,474,480	9,478,914

Source: USDA



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